

WHAT IS CLAIMED IS:

1. A process for sealing a polyurethane/geotextile composite in a canal or ditch, comprising dispensing a non-sagging polyurethane composition onto a seam of a polyurethane/geotextile composite and allowing the composition to cure, the non-sagging polyurethane composition comprising a reaction product of a mixture comprising:

- a liquid polyisocyanate component;
- 80-98% by weight, based on total weight of b) and c), of a liquid high molecular weight isocyanate reactive component comprising one or more hydroxyl group containing compounds having from about 2 to about 6 hydroxyl groups and a number average molecular weight of at least 250 and, 0-10% by weight, based on total weight of b), of a low molecular weight diol or triol having a hydroxy equivalent weight of from about 31 to 99;
- 2-20% by weight, based on total weight of b) and c, of an isocyanate reactive compound containing at least two amine groups;

optionally,

- one or more fillers in an amount of up to 80% by weight, based upon the total weight of the non-sagging polyurethane composition; and

optionally,

- a catalyst.

2. The process of Claim 1, wherein the high molecular weight hydroxyl group containing compound of the liquid isocyanate reactive component b) has a number average molecular weight of from about 400 to about 4,000.

3. The process of Claim 1 wherein isocyanate-reactive compound c) is selected from the group consisting of diamines, polyamines, amine terminated polyethers or combinations thereof.

4. The process of Claim 1, wherein an organo-metallic catalyst is used as catalyst e).

5. The process of Claim 1, wherein the isocyanate reactive compound c) has at least two aromatic amine groups.

5 6. The process of Claim 1, wherein the isocyanate reactive compound c) has at least two alicyclic amine groups.

7. The process of Claim 1, wherein the liquid isocyanate component a) is polymethylene poly (phenylisocyanate).

8. The process of Claim 1, wherein the high molecular weight hydroxyl 10 group containing compound of the liquid isocyanate reactive component b) is a polyether.

9. The process of Claim 8, wherein the polyether does not have any ethylene oxide units.

10. The process of Claim 1, wherein 0% filler d) is included in the non- 15 sagging polyurethane-forming mixtures.

11. The process of Claim 1, wherein no catalyst e) is included in the non-sagging polyurethane-forming mixture.

12. The process of Claim 1, wherein 0% low molecular weight diol or triol is included in the liquid isocyanate reactive component b).

20 13. The process of Claim 1, wherein the amounts of polyisocyanate and polyisocyanate reactive components used to produce the non-sagging polyurethane composition are such that an isocyanate index of from 140 to 90 is achieved.

14. The process of Claim 1, wherein the amounts of polyisocyanate and 25 polyisocyanate reactive components used to produce the non-sagging polyurethane are such that an isocyanate index range of from 110 to 100 is achieved.

15. The process of Claim 1, wherein the liquid isocyanate reactive component b) and the isocyanate reactive compound c) are used in a ratio 30 of 90:10 to 98:2.

16. A process for patching a polyurethane/geotextile composite in a canal or a ditch comprising dispensing a non-sagging polyurethane composition onto a tear, rip and/or other abrasion on a polyurethane-/geotextile composite and allowing the composition to cure, the non-sagging polyurethane composition comprising a reaction product of a mixture comprising:

- a) a liquid polyisocyanate component;
- b) 80-98% by weight, based on total weight of b) and c), of a liquid high molecular weight isocyanate reactive component comprising one or more hydroxyl group containing compounds having from about 2 to about 6 hydroxyl groups and a number average molecular weight of at least 250 and, 0-10% by weight based on total weight of b), of a low molecular weight diol or triol having a hydroxy equivalent weight of from about 31 to 99;
- c) 2-20% by weight, based on total weight of b) and c), of an isocyanate-reactive compound containing at least two amine groups; optionally,
- d) one or more fillers in an amount of up to 80% by weight based upon the total weight of the non-sagging polyurethane composition; and optionally,
- e) a catalyst.

17. The process of Claim 16, wherein the high molecular weight hydroxyl group containing compound of the liquid isocyanate reactive component b) has a number average molecular weight of from about 400 to about 4,000.

18. The process of Claim 16 wherein compound c) is selected from the group consisting of diamines, polyamines, amine terminated polyethers or combinations thereof

19. The process of Claim 16, wherein an organo-metallic catalyst is
5 used as catalyst e).

20. The process of Claim 16, wherein the isocyanate reactive compound c) has at least two aromatic amine groups.

21. The process of Claim 16, wherein the isocyanate reactive compound c) has at least two alicyclic amine groups.

10 22. The process of Claim 16, wherein the liquid isocyanate component a) is polymethylene poly (phenylisocyanate).

23. The process of Claim 16, wherein the high molecular weight hydroxyl group containing compound of the liquid isocyanate reactive component b) is a polyether.

15 24. The process of Claim 23, wherein the polyether has no ethylene oxide units.

25. The process of Claim 16, wherein 0% filler d) is included in the non-sagging polyurethane-forming mixture.

26. The process of Claim 16, wherein no catalyst e) is included in the
20 non-sagging polyurethane-forming mixture.

27. The process of Claim 16, wherein 0% low molecular weight diol or triol is included in the liquid isocyanate reactive component b).

28. The process of Claim 16, wherein the amount of polyisocyanate and polyisocyanate reactive components used to produce the non-sagging
25 polyurethane composition is such that an isocyanate index of from 140 to 90 is achieved.

29. The process of Claim 16, wherein the amount of polyisocyanate and polyisocyanate reactive components used to produce the non-sagging polyurethane composition is such that an isocyanate index range of from
30 110 to 100 is achieved.

30. The process of Claim 16, wherein the liquid isocyanate reactive component b) and the isocyanate reactive compound c) are used in a ratio of 90:10 to 98:2.

~~31.~~ A process for repairing loose and/or damaged concrete in a canal or a ditch comprising dispensing a non-sagging polyurethane composition onto a piece of or in between two or more pieces of concrete, rejoining the damaged or loose concrete with other pieces of concrete and/or a surface and allowing the composition to cure, the non-sagging polyurethane composition comprising a reaction product of a mixture comprising:

10 a) a liquid polyisocyanate component;

 b) 80-98% by weight, based on total weight of b) and c) of a liquid high molecular weight isocyanate reactive component comprising one or more hydroxyl group containing compounds having from about 2 to about 6 hydroxyl groups and a number average molecular weight of at least 250 and, 0-10% by weight, based on total weight of b), of a low molecular weight diol or triol having a hydroxy equivalent weight of from about 31 to 99;

15 c) 2-20% by weight, based on total weight of b) and c) of an isocyanate reactive compound containing at least two amine groups;

20 optionally

 d) one or more fillers in an amount of up to 80% by weight, based upon the total weight of the non-sagging polyurethane composition; and

25 optionally

 e) a catalyst.

32. The process of Claim 31, wherein the high molecular weight hydroxyl group containing compound of the liquid isocyanate reactive

component b) has a number average molecular weight of from about 400 to about 4,000.

33. The process of Claim 31 wherein compound c) is selected from the group consisting of diamines, polyamines, amine terminated polyethers or
5 combinations thereof.

34. The process of Claim 31, wherein an organo-metallic catalyst is used as catalyst e).

35. The process of Claim 31, wherein the isocyanate reactive compound c) has at least two aromatic amine groups.

10 36. The process of Claim 31, wherein the isocyanate reactive compound c) has at least two alicyclic amine groups.

37. The process of Claim 31, wherein the liquid isocyanate component a) is polymethylene poly(phenylisocyanate).

38. The process of Claim 31, wherein the high molecular weight
15 hydroxyl group containing compound of the liquid isocyanate reactive component b) is a polyether.

39. The process of Claim 31, wherein the polyether has no ethylene oxide units.

40. The process of Claim 31, wherein 0% filler d) is included in the non-sagging polyurethane-forming mixture.
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41. The process of Claim 31, wherein no catalyst e) is included in the non-sagging polyurethane-forming mixture.

42. The process of Claim 31, wherein 0% low molecular weight diol or triol is included in the liquid isocyanate reactive component b).

25 43. The process of Claim 31, wherein the amount of polyisocyanate and polyisocyanate reactive components used to produce the non-sagging polyurethane composition is such that an isocyanate index of from 140 to 90 is achieved.

44. The process of Claim 31, wherein the amount of polyisocyanate
30 and polyisocyanate reactive components used to produce the non-sagging

polyurethane composition is such that an isocyanate index of from 110 to 100 is achieved.

45. The process of Claim 31, wherein the liquid isocyanate reactive component b) and the isocyanate reactive compound c) are used in a ratio 5 of 90:10 to 98:2.

46. A ditch or canal lined with a polyurethane/geotextile composite wherein the integrity of the canal and/or ditch has been maintained with a non-sagging polyurethane composition, the non-sagging polyurethane composition comprising a reaction product of a mixture comprising:

- 10 a) a liquid polyisocyanate component;
- b) 80-98% by weight, based on total weight of b) and c), of a liquid high molecular weight isocyanate-reactive component comprising one or more hydroxyl group containing compounds having from about 2 to about 6 hydroxyl groups and a number average molecular weight of at least 250 and, 0-10% by weight, based on total weight of b) of a low molecular weight diol or triol having a hydroxy equivalent weight of from about 31 to 99;
- 15 c) 2-20% by weight, based on total weight of b) and c) of an isocyanate reactive compound containing at least two amine groups;
- 20 optionally,
- d) one or more fillers in an amount of up to 80% by weight based upon the total weight of the non-sagging polyurethane composition; and
- 25 optionally,
- e) a catalyst.

47. The ditch or canal of Claim 46 wherein compound c) is selected from the group consisting of diamines, polyamines, amine terminated 30 polyethers and combinations thereof.